

Appl. No. 10/616,020
Office Action Mailed October 12, 2005
Response transmitted November 14, 2005

Attorney Docket 285/536

REMARKS

1. The application was filed with Claims 1-68. Applicants thank the Examiner for making of record the Information Disclosure Statements previously submitted by Applicants. The present Office Action rejects all claims under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) in view of several references.

2. Claims 1-3, 6, 11-16, 24-25, 28, 30, 35, 37, 39-42 and 45 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 4,733,068 to Alfred Thiele et al. ("Thiele"). The rejection cites three passages in Thiele as disclosing the limitations of the claims. The rejection admits that Thiele does not teach or disclose adhesion or the adhesive recited in Claims 2, 11, 25, 30, and 39, and states that something must hold the elastic layers together. Office Action, p. 2, lines 10-12. As to the adhesive recited in several dependent claims, the structure of Thiele may be held together mechanically by fasteners or by weaving fibers through the layers of supporting surfaces and spacers. No adhesive is necessarily present in Thiele's structures, and as admitted in the Office Action, Thiele discloses or teaches no adhesive.

Claim 1 has been amended to distinguish from Thiele. Support for the amendment is found at least in the specification, paragraph [0028], in Fig. 3, and in Claim 3 as filed. Amended Claim 1 recites a sensing system comprising a sensing pad, a laminate structure, and an array of optical sensors, in which each optical sensor comprises a discrete pair of optical fibers. In Thiele, each optical fiber is used for multiple "sensor elements," each element being formed by the intersection of a transmitting fiber with a detecting fiber, and in which each transmitting fiber intersects with several detecting fibers, and in which each detecting fiber intersects with several transmitting fibers.

Thiele does not use discrete pairs of optical fibers, or optical fibers joined side by side at ends of the optical fibers, or gathered by their ends into terminations, or to a first and second interface gathering, as recited in independent Claims 1, 24, 30 and 39. Accordingly, Thiele does not anticipate these claims nor claims depending from them, including Claims 2-3, 6, 11-16, 25, 28, 35, 37, 40-42 and 45. The Examiner is

Appl. No. 10/616,020
Office Action Mailed October 12, 2005
Response transmitted November 14, 2005

Attorney Docket 285/536

respectfully requested to withdraw the rejections of Claims 1-3, 6, 11-16, 24-25, 28, 30, 35, 37, 39-42, and 45.

3. Claims 4, 5, 7, 18-20, 22, 26, 31, 34, and 43 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 4,733,068 to Alfred Thiele et al. ("Thiele"), in view of U.S. Pat. No. 6,452,667 to Mark Fernald et al. ("Fernald"), and further in view of U.S. Pat. Appl. Publ. No. 2001/0054682 to Thomas Bennett et al. (Bennett").

As for Claim 7, the rejection states that Bennett discloses the use of a trench cut into a substrate to hold an optical cable, citing Fig. 1 of Bennett. Applicants traverse this assertion. Bennett is directed to a composite ribbon member, and as shown in Figs. 2 and 3 of Bennett, the "trench" is simply a void made by the optical fiber itself in a composite material made of glass fiber/resin prepreg tow (glass fibers impregnated with resin and formed into a narrow ribbon). Bennett, paragraphs [0027] and [0028]. Bennett does not teach or suggest the limitations of Claim 7, which is therefore allowable.

Independent Claim 18 has been amended and is not taught or suggested by the references, since none of the references teach an optical sensor that is made from a discrete pair of optical fibers, as recited in amended Claim 18. Support for the amendment to Claim 18 is found at least in the specification, at paragraph [0028], and in Fig. 3. Accordingly, Claim 18 is allowable, as are claims depending from Claim 18, Claims 19-20 and 22. Additionally, Claims 4, 5, 26, 31, 34 and 43 depend from allowable Claims 1, 24, 30 and 39, and are also allowable. The Examiner is respectfully requested to withdraw the rejections of Claims 4-5, 7, 18-20, 22, 26, 31, 34, and 43.

4. Claims 8-10, 21, 27, 32, 33, 36 and 44 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 4,733,068 to Alfred Thiele et al. ("Thiele"), in view of U.S. Pat. No. 6,452,667 to Mark Fernald et al. ("Fernald"), further in view of U.S. Pat. Appl. No. 4,369,525, to Jean Breton et al. ("Breton"), and further in view of U.S. Stat. Inv. Reg. H322 to Brent Simons ("Simons") and U.S. Pat. No. 5,870,417 to Jean-Marc Verdiell et al. (Verdiell").

Appl. No. 10/616,020
Office Action Mailed October 12, 2005
Response transmitted November 14, 2005

Attorney Docket 285/536

Claims 8-10, 21, 27, 32, 33, 36, and 44 are allowable at least because they depend from allowable Claims 1, 18, 24, 30, and 39. Claim 33 is also allowable because the references do not disclose the limitations of Claim 33. The rejection cites Verdiell, col. 11, lines 53-62, as disclosing the limitations of Claim 33. Verdiell does not disclose plastic fibers as recited in Claim 33, only glass fibers 20, as shown in Verdiell, Fig. 5 and col. 8, lines 8-13. The passage in col. 11, cited in the rejection, refers to this same glass fiber 20. Accordingly, Verdiell does not teach or suggest the limitations of Claim 33, which is therefore allowable.

The Examiner is respectfully requested to withdraw the rejections of Claims 8-10, 21, 27, 32, 33, 36, and 44.

5. Claims 17, 23, 29, 38 and 46-68 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,345,839 to Naobumi Kuboki et al. ("Kuboki"), in view of U.S. Pat. No. 4,733,068 to Alfred Thiele et al. ("Thiele"). The rejection does not cite any passages from either reference. Claims 17, 23, 29, 38 and 46 are allowable at least because they depend from allowable Claims 1, 20, 24, 30, and 39.

Claims 47, 57 and 65 have been amended to distinguish them from the fiber arrays of Thiele. Claim 47 has been specifically amended to add the structure of the reflective materials between which the optical sensors are sandwiched. These reflective materials are not disclosed in Kuboki or Thiele. Claim 57 has been amended to add the limitation that each optical sensor is made from a discrete or separate pair of optical fibers. Claim 65 has been amended to add the limitation that each sensor comprises a pair of optical fibers joined at the ends of the optical fibers. Support for the amendments to Claims 47, 57, and 65 is found at least in the specification, at paragraph [0028], paragraph [0031], and in Figs. 3 and 4.

As discussed above for Claim 1, Thiele uses sensor elements that are made of intersections of each of a first plurality of fibers with each of a second plurality of fibers, while embodiments of the present invention use discrete pairs of fibers joined at the ends of the fibers. Neither reference teaches reflective materials enclosing the fibers.

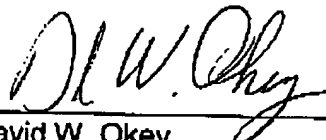
Appl. No. 10/616,020
Office Action Mailed October 12, 2005
Response transmitted November 14, 2005

Attorney Docket 285/536

Accordingly, Claims 47, 57, and 65 are allowable, as are claims depending from them, Claims 48-56, 58-64, and 66-68. The Examiner is respectfully requested to withdraw the rejections of Claims 17, 23, 29, 38 and 46-68.

6. The Examiner is respectfully requested to enter the amendment, to withdraw the rejections to the application, and to allow the claims of the application. If a telephone call to the undersigned would be of use to the Examiner, or would help to expedite prosecution of the application, the Examiner is invited to call the undersigned at the telephone number below.

Respectfully submitted,



David W. Okey
Registration No. 42,959
Attorney for Applicant

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200